**Academic Program Specification Form For The Academic**

Republic of Iraq

Ministry of Higher Education & Scientific Research

Supervision and Scientific Evaluation Directorate

Quality Assurance and Academic Accreditation

University: Madill Technical University

College :AL Mansour technical medical Institute

Department : electronic technologies Department/medical devices branch

Date Of Form Completion: 1/11/2016

Dean ’s Assistant For Scientific Affairs

Date : / /

Signature

Quality Assurance And University Performance Manager

Date : / /

Signature

Dean ’s Name

Date : / /

Signature

Head of Department

Jameela lammam abed

Date : / /

Signature

**TEMPLATE FOR PROGRAMME SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

**PROGRAMME SPECIFICATION**

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| This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme. |

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| Madill Technical University | 1. Teaching Institution |
| AL Mansour technical medical Institute | 2. University Department/Centre |
| electronic technologies Department/medical devices branch | 3. Programme Title |
| technical diploma | 4. Title of Final Award |
| annual | 5. Modes of Attendance offered |
| ABET | 6. Accreditation |
| there's close relationship with the labor market which receives alumnus. So labor is considered curriculum (under a previous questionnaire). | 7. Other external influences |
| 1/11/2016 | 8. Date of production/revision of this specification |
| 9. Aims of the Programme | |
| he Department aims to prepare intermediate cadres specializing in maintenance of electromechanical and electronic medical devices through theoretical lessons and practical experiences of the student receives during two summer training in hospitals to work on various medical equipment such as 1-physical therapy devices of various kinds. 2-Ray devices. 3. The ECG, brain and muscles. 4. A dentist Chair. 5. DC shock. 6. Baby sitter device. 7. Test the fetus. Muscle gauge types | |

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| 10. Learning Outcomes, Teaching, Learning and Assessment Methods |
| A. Knowledge and Understanding  A1. Identify the principles and basics of electronics specialty in General.  A2. Identify the principles and basics of specialty medical devices.  A3. Learn about the types of medical devices and rated to electronic and electromechanical.  A4. Learn the basics of desktop computer. |
| B. Subject-specific skills  B1-how medical devices and potential disruptions.  B 2 – electronic maintenance skills recognition laboratory lesson.  B 3 – learn the skills of medical equipment of all kinds |
| Teaching and Learning Methods |
| Lectures/practical lectures in laboratories and workshops and Labs/summer training. |
| Assessment methods |
| Daily assessment/libertarian theory tests/practical tests in the laboratory and workshop/mid/senior research discussion/final examinations. |
| C. Thinking Skills  C1. Persuaded of the importance of the specialization studies.  C2. Estimated size and technical effort in giving scientific material.  C3. Share groups, students in collective works.  C4. Respect the dedication to work and hates cheating. |
| Teaching and Learning Methods |
| Lectures, discussion |
| Assessment methods |
| Daily assessment/libertarian theory tests/practical tests in the laboratory and workshop |

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| D. General and Transferable Skills (other skills relevant to employability and personal development)  D1. A graduate capable of electronic equipment in General. D2. A graduate capable of keeping up with the evolution in the electronic device.  D3. Be capable of completing graduate studies in a particular field of specialization and electronics in General. | | | | |
| Teaching and Learning Methods | | | | |
| Lecture-workshop – laboratory – systematic training – summer internship. | | | | |
| Assessment Methods | | | | |
| Daily assessment/libertarian theory tests/practical tests in the laboratory and workshop/mid/senior research discussion/final examinations. | | | | |
| 12. Awards and Credits | 11. Programme Structure | | | |
| Credit  rating | Course or Module Title | Course or  Module  Code | Level/Year |
| Bachelor Degree  Requires ( x ) credits | 8 | Electronic |  | First stage  2016-2017 |
| 8 | Digital circuits |  |  |
|  | 8 | Electric circuits &measurements |  |  |
| 8 | The workshops |  |  |
| 4 | Mathematics |  |  |
| 6 | Computer application |  |  |
|  | 6 | Engineering &electrical drawing |  |  |
|  | 4 | Physiology |  |  |
|  | 4 | Democracy and human rights |  |  |
| Second stage 2016-2017 | 8 | Electronic circuits |  |  |
|  | 8 | Electronic measurements device |  |  |
|  | 8 | microcomputers |  |  |
|  | 8 | electronic medical devices |  |  |
|  | 8 | electromechanical medical devices |  |  |
|  | 8 | control |  |  |
|  | 8 | maintenance medical devices |  |  |
|  | 6 | Computer application |  |  |
|  | 4 | project |  |  |

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| 13. Personal Development Planning |
| 1. use of computers in electronic designs  2-search the Internet for enrichment topics that increase student informed competence |
| 14. Admission criteria . |
| Student depends centrally on average and being a graduate branch of science or the top 10 percent of industrial schools specialty medical equipment and has it after an interview for a student at the Institute. |
| 15. Key sources of information about the programme |
| ـــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ |

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| **Curriculum Skills Map** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Programme Learning Outcomes** | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | |
| General and Transferable Skills (or) Other skills relevant to employability and personal development | | | | | Thinking Skills | | | | | Subject-specific skills | | | | | Knowledge and  understanding | | | | | | Core (C)  Title or Option  (O**)** | | Course Title | | Course  Code | | Year / Level | | | |
| **D4** | **D3** | **D2** | **D1** | | **C4** | **C3** | **C2** | **C1** | | **B4** | **B3** | **B2** | **B1** | | **A4** | **A3** | **A2** | **A1** | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | Electronic | |  | |  | | | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | Digital circuits | |  | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | Electric circuits &measurements | |  | |  | | | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | The workshops | |  | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Mathematics | |  | |  | | | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Computer application | |  | |
|  |  |  |  | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Engineering &electrical drawing | |  | |  | | | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | | **\** |  |  | **\** | | |  | | Physiology | |  | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Democracy and human rights | |  | |  | | | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Electronic circuits | |  | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Electronic measurements device | |  | |  | | | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | microcomputers | |  | |
|  |  |  | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** |  | | |  | | electronic medical devices | |  | |  | | | |
|  |  |  | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** |  | | |  | | electromechanical medical devices | |  | |  | | | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | control | |  | |  | | | |
|  |  |  | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** |  | | |  | | maintenance medical devices | |  | |  | | | |
|  |  |  | **\** | |  |  |  |  | |  | **\** |  |  | |  |  |  | **\** | | |  | | Computer app appapplication | |  | |  | | | |
|  |  |  |  | |  |  |  |  | |  |  |  |  | |  |  |  |  | | |  | | project | |  | |  | | | |

**COURSE SPECIFICATION**

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| This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programmer specification. |

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| Institute of medical Technology – AL Mansur | 1. Teaching Institution |
| Middle Technical University – Electronic Technology - Medical devices | 2. University Department/Centre |
| controll | 3. Course title/code |
| Engineering | 4. Program(s) to which it contributes |
| Practical and Theoretical | 5. Modes of Attendance offered |
| Yearly | 6. Semester/Year |
| 2x30=60 hours  2x30=60 hours | 7. Number of hours tuition (total) |
| 1/11/2016 | 8. Date of production/revision of this specification |
| 9. Aims of the Course | |
| Student sergeant on: introduction to automatic control system , the open and closed system, how to check the system. | |

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| 10· Learning Outcomes, Teaching ,Learning and Assessment Method |
| 1. Knowledge and Understanding   A1. Understand the control system.  A2. Recognizes the types of control system .  A3. Compares between the open and closed system .  A4. Concludes how to check the control system .  A5. Concludes the steady state error. |
| B. Subject-specific skills  B1. how to check the control system .  B2.find the steady time .  B3.draw the response . |
| Teaching and Learning Methods |
| Lecture,discussion. project method |
| Assessment methods |
| Written examination,oral,observation,homework, laboratory report. |
| C. Thinking Skills  C1.Convinced his study.  C2.Estimated the staff in an effort to give the scientific article.  C3.Participate in team work.  C4.Respects dedication to work and hates cheating. |
| Teaching and Learning Methods |
| Lecture , Discussion |
| Assessment methods |
| Observations |

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| D. General and Transferable Skills (other skills relevant to employability and personal development)  D1.use of PC in field.  D2.An ability to search Information from internet.  D3.Development Skills communication.  D4.Writing technical reports in the specialty field. |

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| 11. Course Structure | | | | | |
| Assessment Method | Teaching  Method | Unit/Module or Topic Title | ILOs | Hours | Week |
| Written exam. | Lecture | **Introduction to automatic control system, open and closed system** | Understand. | 2 | 1 |
| = | Lecture | **Control system, types of automatic control system.** | = | 2 | 2 |
| = | Lecture | **Control system , block diagrams ,transfer function** | = | 4 | 3 |
| = | Lecture | **Block diagrams theory.** | = | 4 | 4&5 |
| Practical exam. | Practical lecture | **Control system with more than inputs and outputs.** | compare | 2 | 6 |
| Written exam. | Lecture | **Signal flow charts, Masson theory.** | Understand | 2 | 7 |
| Written exam. | Lecture | **Transfer function by use Masson theory.** | = | 2 | 8 |
| Discussion | Lecture | **The physics' system, electrical and mechanical system, finds the transfer system.** | Draw | 4 | 10&9 |
| Report | Practical lecture | **Laplace transformation, inverse of Laplace transformation, used to solve differential equation.** | Determination | 4 | 12&11 |
| Written exam. | Lecture | **Logic system. Use of operation amplifier in logic system, used differential equation. to solve** | compare | 4 | 14&13 |
| = | Lecture | **Logic system** | Understand | 2 | 15 |
| = | Lecture | **Types of inputs signal –system stability-types of system.** | Draw | 2 | 16 |
| = | Lecture | **Stability – S-plan- find the poles and roots** | Marking | 4 | 17&18 |
| = | Lecture | **Routh criteria –used to find the stability** | Understand | 4 | 19&20 |
| = | Lecture | **Response –time and frequency transient response. Time response for first order system.** | Application | 2 | 21 |
| = | Lecture | **Time response for second order system.** | Understand | 4 | 22&23 |
| = | Lecture | **Types of frequency response- example.** | Draw | 4 | 24&25 |
| = | Lecture | **Types of controls** | Understand | 4 | 26&27 |
| = | Lecture | **Steady state error** | = | 4 | 28&29 |
| = | Lecture | **Root locus** | = | 2 | 30 |

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| 12. Infrastructure | | |
|  | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| Modern control engineer -ogata | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| Practical lab. Lecture. | Community-based facilities  (include for example, guest  Lectures , internship , field studies) | |

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| 13. Admissions | |
| Graduate from secondary school – scientific branch. | Pre-requisites |
| 100 student | Minimum number of students |
| 150 student | Maximum number of students |